Parts List:

        100 operating console
        102 control panel
5   104 display
        106 image processor module
        108 central processing unit (CPU)
        112 tape drive
        114 disk storage
10   116 link
        120 computer system
        122 system control
        124 memory module
        126 high speed serial link
15   128 serial link
        130 gradient amplifiers
        132 physiological acquisition controller
        134 patient positioning system
        136 scan room interface circuit
20   138 pulse generator module
        140 polarizing magnet
        142 magnet assembly
        144 gradient coil assembly
        146 CPU module
25   150 transceiver module
        152 RF coil
        154 transmit/receive switch
        156 RF amplifier
        158 preamplifier
30   160 memory module
        164 array processor
        200 physiological pipeline
        202 physiological data
        204 physiological data acquisition
35   206 calculate trigger
        208 visual display of physiological event
        210 MR data pipeline
        212 MR image data
        214 MR data acquisition
40   216 MR data reconstruction
        218 data storage
        220 trigger control
        222 MR data display
        230 physiological pipeline
45   232 physiological data
        234 physiological data acquisition
        236 calculate trigger

238 visual display of physiological event
240 time synchronization
242 data conduit
244 MR image display
246 physiological waveform display
250 MR data pipeline
252 MR image data
254 MR data acquisition
256 MR data reconstruction
258 data store
262 combined visual display
270 physiological signal waveform
272 gated mode synchronization
274 gate/no gate burst mode synchronization
276 segmented burst mode synchronization
300 physiological acquisition controller (PAC)
302 physiological waveform
304 signal processing unit (SPU)
306 physiological waveform
308 trigger number
310 triggers
312 sequencer (SEQ)
314 trigger number
316 start sequence interrupt (SSI)
318 application gateway processor (AGP)
320 scan control processor (SCP)
322 wave form segments
324 image timestamp
328 acquisition processing system (APS)
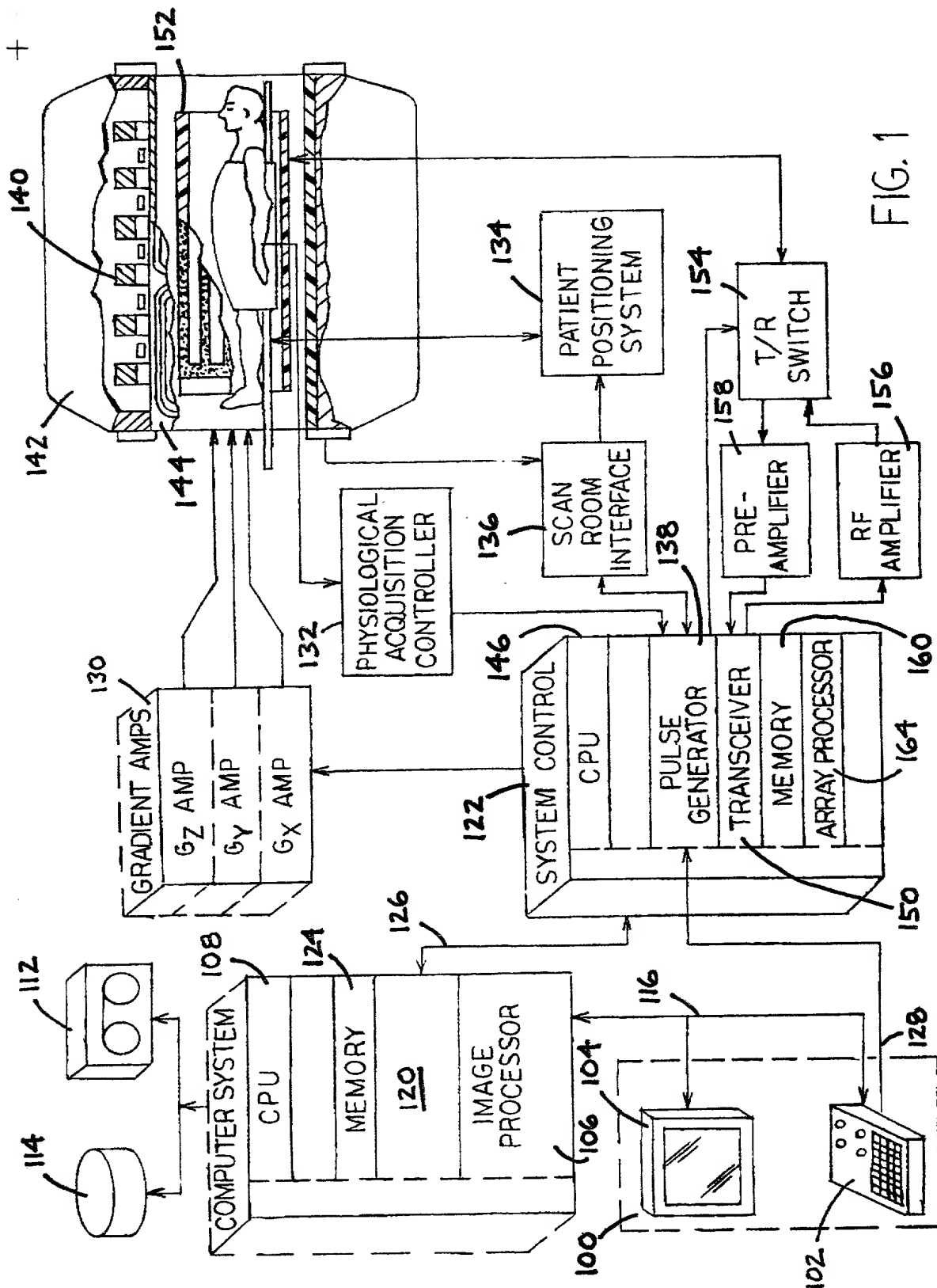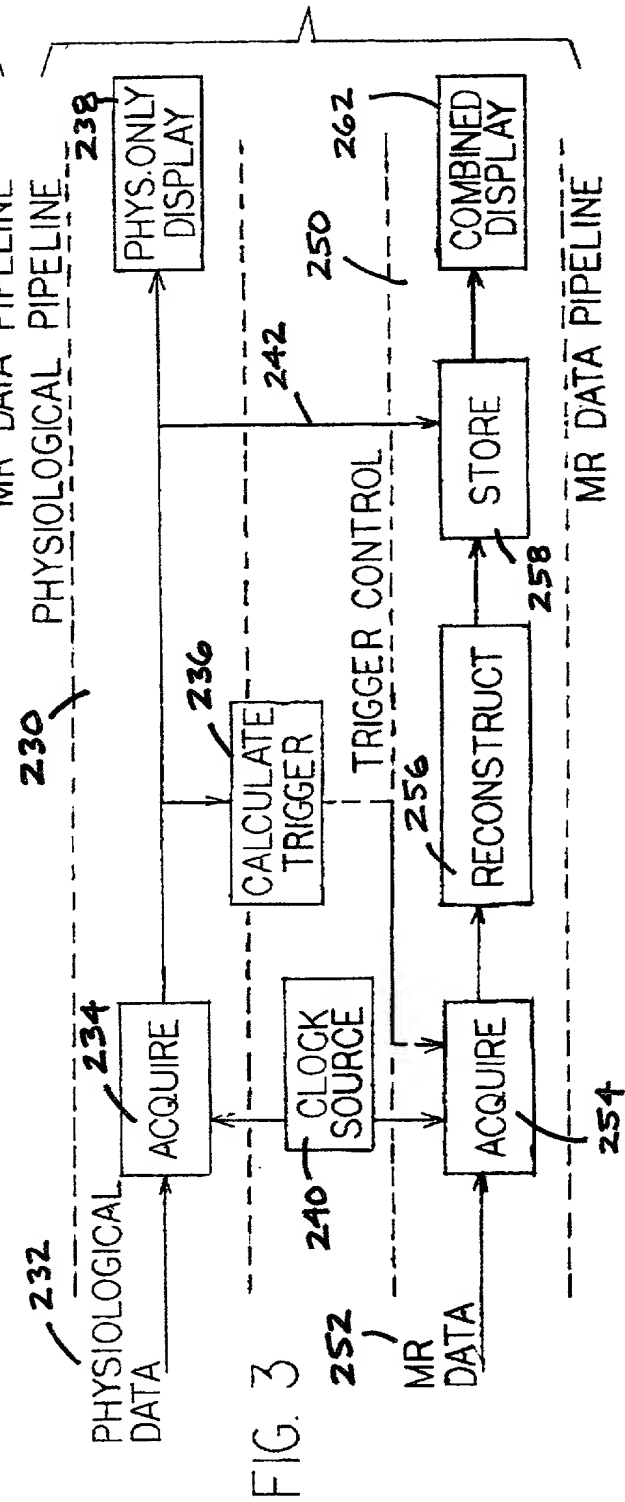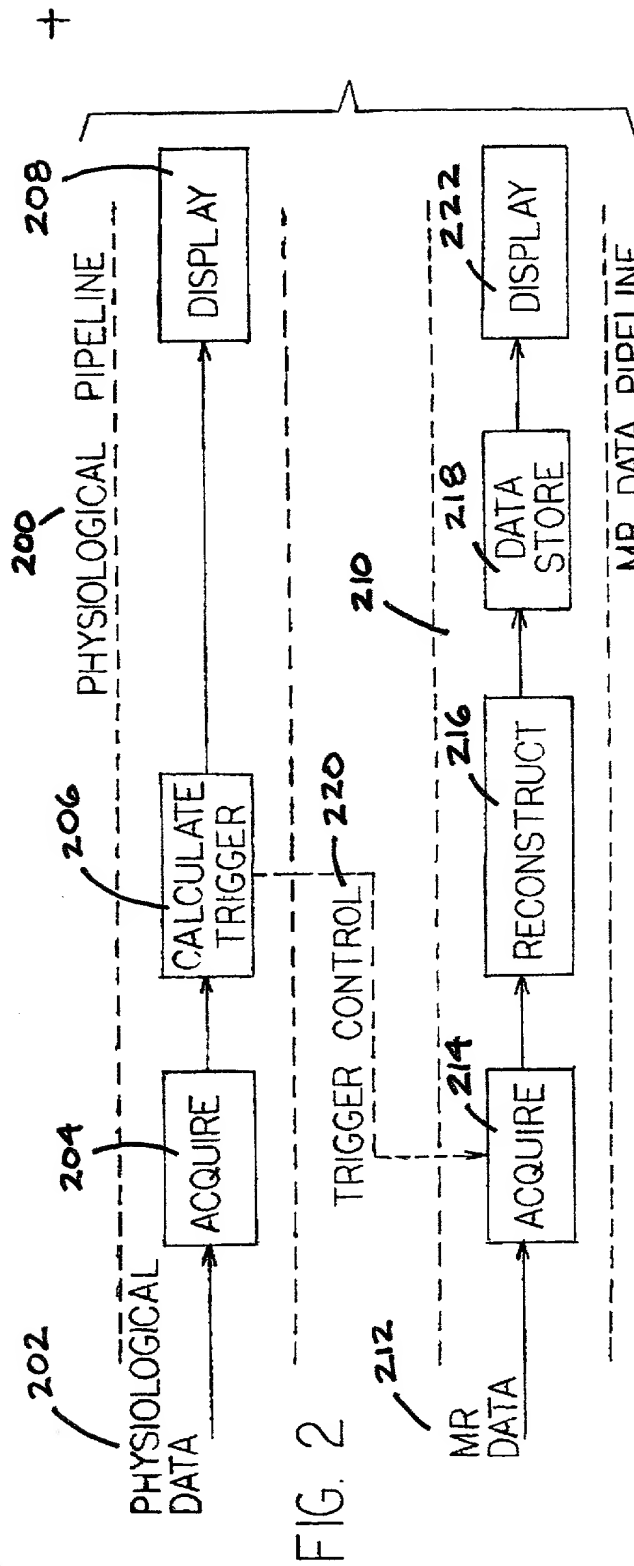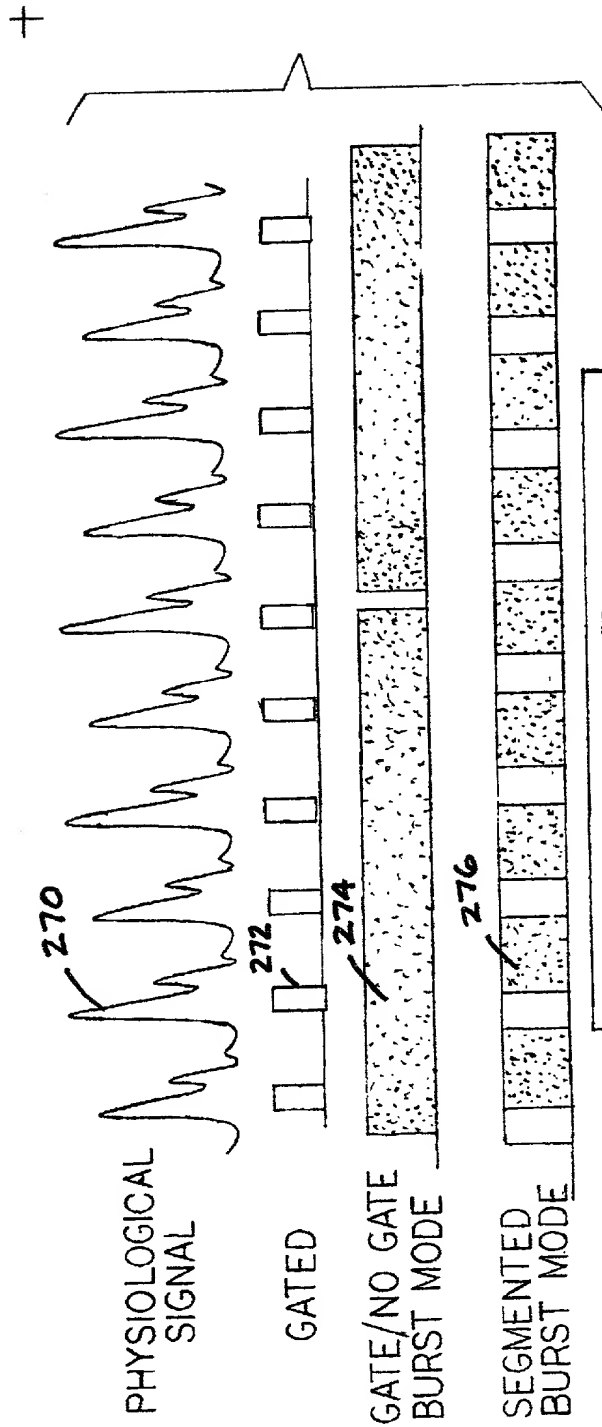330 trigger and timestamp data
332 host

FIG. 1

FIG. 2

PHYSIOLOGICAL PIPELINE 200

PHYSIOLOGICAL DATA 202 → ACQUIRE 204 → CALCULATE TRIGGER 206 → DISPLAY 208

TRIGGER CONTROL 220

MR DATA 212 → ACQUIRE 214 → RECONSTRUCT 216 → DATA STORE 218 → DISPLAY 222

MR DATA PIPELINE 210

FIG. 3

PHYSIOLOGICAL PIPELINE 230

PHYSIOLOGICAL DATA 232 → ACQUIRE 234 → CALCULATE TRIGGER 236 → PHYS.ONLY DISPLAY 238

CLOCK SOURCE 240

TRIGGER CONTROL 242

MR DATA 252 → ACQUIRE 254 → RECONSTRUCT 256 → STORE 258 → STORE 250 → COMBINED DISPLAY 262

MR DATA PIPELINE

PHYSIOLOGICAL
SIGNAL

270

GATED

272

GATE/NO GATE
BURST MODE

274

SEGMENTED
BURST MODE

276

244

104

FIG. 4

TIME 0   1

246

FIG. 5

FIG. 6